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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/563,993

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Frank Reichenbach

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EXAMINER

PATEL, PUNAM

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/563,993	<b>Applicant(s)</b> REICHENBACH ET AL.	
	<b>Examiner</b> PUNAM PATEL	<b>Art Unit</b> 2855	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 October 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 19,21-28 and 30-36 is/are pending in the application.
- 4a) Of the above claim(s) 24,33 and 34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 19,21,25-28,30-32 and 35 is/are rejected.
- 7) ☒ Claim(s) 22,23 and 36 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 32 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

With respect to Claim 32, the disclosure fails to teach what an auxiliary structure is. No description of the structure or the function of the structure has been provided in the Specification or in the drawings (note that #25 simply points to a corner of the device). For the purposes of examination an auxiliary structure will be read as an attachment point (rather than a structure) on the corner of the measurement chip for the cap.

### ***Claim Rejections - 35 USC § 102***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Art Unit: 2855

**Claims 19, 21, 25-27, 31, and 32 are rejected under 35 U.S.C. 102(b) as being anticipated by Aine (US 4,021,766).**

With respect to Claims 19, 31, and 32, Aine discloses an apparatus comprising:  
a measurement chip (#21) with a first and second measurement area/structure (col. 3: 60-63, #s 25 are the areas with PZT structure formed thereon) formed thereon;  
the measurement areas being offset in a y-direction (Fig. 3);  
a cap chip (#41, the second wafer; Abstract, "the partitioning structure comprises a second wafer sealed over the first wafer"; col. 4: 15-16 & col. 5: 25-29, the wafer is silicon;) fastened to the measurement chip in a connecting area (#20, the die attach areas around the measurement areas; also read as the auxiliary structure);  
intermediate space (see Fig. 16) between the cap chip (#41) and the measurement chip (#21);  
at least one contact area not covered by the cap chip (#35 & col. 5: 33-35); and  
a wafer bond support point (#45) between the two measurement areas (#s 25) in which the cap chip (#51) is fastened to the measurement chip (#26, wherein #26 is part of the measurement chip #21). See Figs. 3, 12, and 16.

With respect to Claim 21 and 25-27, Aine discloses two contact areas formed on opposing sides of the measurement chip, offset in a lateral direction, and left exposed by the cap chip. See Figs. 3 & 12, #35, wherein the individual bond pads are read as the contact areas.

***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

**Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aine (US 4,021,766).**

With respect to Claim 28, Aine discloses two contact areas on opposing sides of the measurement chip, but fails explicitly teach the contact areas being on all four sides of the measurement chip. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to have four contact areas, one on each side, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8. In this instance, placing a contact point on each side allows flexibility and access to external devices to which the electrical signals from the transducer are outputted to.

**Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aine (US 4,021,766).**

With respect to Claim 30, Aine discloses a wafer bond support point, but fails to disclose two wafer bond support point with a gap there between (see Applicant's Fig. 3, wherein the bonds are interrupted by a gap). It would have been obvious to one of ordinary skill in the art at

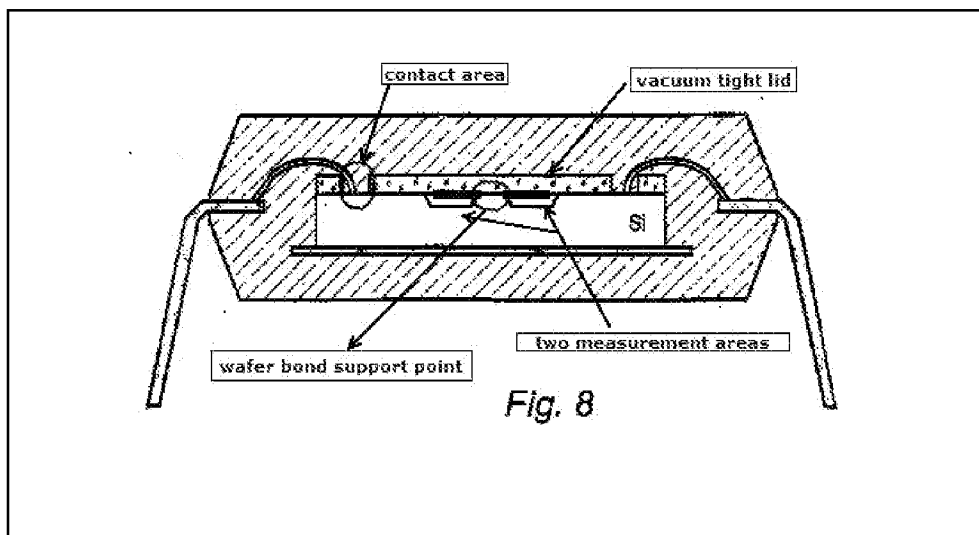
Art Unit: 2855

the time of the invention was made to have two support points in the same axis, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8. Furthermore, in this instance, an additional attachment point would serve to further secure the cap to the measurement chip, and placing the points on the same axis inherently provides stability to the attached cap and only involves routine skill in the art.

**Claims 19, 21, 25, 27, 31, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Landsberger (US 2006/0063292) in view of Endo (US 5,962,854) or Lee et al. (US 5,584,117).**

With respect to Claims 19 and 31, Landsberger discloses an apparatus comprising:  
a measurement chip (the Si substrate) with a first and second measurement area/structure formed thereon (the cantilever structures);  
the measurement areas being offset in a lateral direction;  
a cap chip fastened to the measurement chip in a connecting area and at a point between the two measurement areas (read as wafer bond support point);  
intermediate space (the cavity) between the cap chip and the measurement chip; and  
at least

one contact area not covered by the cap chip. See



Art Unit: 2855

Annotated Fig. 8 below; Abstract; & ¶s 43, 51-54.

While Landsberger discloses the vacuum lid being mad from a transparent material that could work as a glass cover for a micro-bolometer, but fails to teach the transparent material being silicon.

Silicon has the property that it is transparent to low energy in the infrared portion of the EM spectrum. Endo teaches utilizing a silicon cap (#29 & col. 14: 55-65) as an infrared transparent filter for a micro-bolometer. Lee et al. also teaches utilizing a silicon plate as a cap (# 32) for a micro-bolometer. It would have been obvious to one of ordinary skill in the art at the time of the invention to select as the transparent material for the micro-bolometer of Landsberger, silicon, as taught by Endo et al. or Lee et al., since silicon is transparent to IR radiation with little or no variation in refractive index (Lee et al., col. 2: 63-67) and because it is readily utilized as a cap-chip material for a micro-bolometer.

With respect to Claim 21, 25, and 27, Landsberger further discloses two contact areas formed on opposing sides of the measurement chip and left exposed by the cap chip. See Annotated Fig. 8 below.

With respect to Claim 35, Landsberger further discloses a lead frame, a housing, and wire bonds. See Annotated Fig. 8 above. (Compare to Applicant's Fig. 8).

***Response to Arguments***

Applicant's arguments filed 10/10/2008 have been fully considered.

Applicant's arguments with respect to claims 19, 21-23, 20-31, 35, and 36 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's arguments with respect to claim 32 have been considered but they are not persuasive. The disclosure simply states that auxiliary structures are formed in the corner areas of the measurement chip (Specification, pg. 3: 4-7, 12-16; pg. 7: 18-22; pg. 8: 12-15; and claim 32). A person having ordinary skill in the art could not make the claimed device, since the auxiliary structure has not been sufficiently disclosed. What function do they serve in the "processing of the cap"? What material is it made of? What structural elements does an auxiliary structure comprise?

***Allowable Subject Matter***

Claims 22, 23, and 36 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).



Art Unit: 2855

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PUNAM PATEL whose telephone number is (571)272-6794. The examiner can normally be reached on Monday to Friday 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Harshad Patel/  
Primary Examiner, Art Unit 2855

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11/20/2008

Application/Control Number: 10/563,993

Page 9

Art Unit: 2855